

## Safety Data Sheet

### 1. Product and company identification

Product name : AMMONIA WATER 29%  
Name of manufacturer : KANTO CHEMICAL CO., INC.  
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan  
Name of section : Electronic materials division technical department  
Telephone number : +81-3-6214-1080  
Facsimile number : +81-3-3241-1043  
Mail address : el-info@gms.kanto.co.jp  
SDS No. : GE00156

### 2. Summary of danger and Hazard

#### GHS classification

##### Physical and chemical hazard

Flammable liquids : Out of category

Pyrophoric liquids : Out of category

Self-heating substances and mixtures  
: Out of category

Corrosive to metals : Category 1

##### Human health hazard

Acute toxicity(oral) : Category 4

Skin corrosion/irritation  
: Category 1C

Serious eye damage/eye irritation  
: Category 1

Specific target organ systemic toxicity(single exposure)  
: Category 1

##### Environmental hazard

Hazardous to the aquatic environment-acute hazard  
: Category 2

Hazardous to the aquatic environment-chronic hazard  
: Out of category

#### Pictogram or symbol



Signal word : Danger

Hazard statement : May be corrosive to metals  
Harmful if swallowed  
Causes severe skin burns and eye damage  
Causes serious eye damage  
Causes damage to organs (central nervous system, respiratory organs)

Toxic to aquatic life

Cautions

Safety measurements : Keep only in original container.  
Do not breathe dust, mist, and vapor.  
Avoid release to the environment.  
Do not eat, drink or smoke when using this product.  
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.  
Wash protective equipment thoroughly after use.  
Wash hands thoroughly after handling.

First-aid measures : If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical treatment if you feel unwell.

If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment.

If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.

If on skin : Remove contaminated clothing and the substance. Immediately get medical treatment.

If exposed, get medical treatment.

Absorb spillage to prevent material damage.

Storage : Keep in corrosive resistant container.

Store locked up.

Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

Substance/Mixture : Substance

Chemical name or commercial name

: Ammonia water

Ingredients and composition

: Water solution contains 28.0-30.0% Ammonia

Chemical formula : NH<sub>3</sub>

CAS No. : 1336-21-6

TSCA Inventory : Registered

EINECS No. : 2156476

Dangerous and hazardous ingredients

: Ammonia water

4. First aid measures

Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

Skin contact : Wash the affected areas under running water.

Eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

Ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Anticipated acute and delayed symptoms

: Inhalation of high concentration of ammonia gas caused pulmonary edema, and cessation of breathing. Ammonia water has severe irritation and corrosion of skin, and penetrates into deeper tissues. Contact of high concentration of ammonia water with eyes may lead visual disturbance.

Protection for first aid person

: Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, foam

Prohibited extinguishing media

: None

Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Fight fire from windward.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.

Protection for firefighters

: Firefighters should wear protective equipment.

6. Accidental release measures

Cautions for personnel : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Cautions for environment : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Removal measure : Absorb spill with diatomaceous earth or dry sand and place in container. Neutralize residue with dilute acid and then flush with copious amounts of water.

Prevention of second accident

: Remove nearby sources of ignition and prepare extinguishing media.

7. Cautions of handling and storage

Handling

Engineering measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Pay attention to fire.

Cautions for safety handling

: Use with an enclosed system or a local exhaust ventilation. Handle in a well-ventilated place. When outdoors, work is done from the windward.

Storage

Adequate storage condition

: Store in a dark, cool place and tightly closed.

Do not store with acid substances.

Safety adequate container materials

: Polyethylene, fluorine resin

#### 8. Exposure control/Personal protection

Engineering measures : Use with an enclosed system or a local exhaust ventilation.

Control parameters

ACGIH(2015) : 25ppm(TLV-TWA)

35ppm (TLV-STEL)

Protective equipment

Respiration protective equipment

: If necessary, wear a chemical cartridge respirator with ammonia gases.

Hands protective equipment

: Impervious protective gloves

Eyes protective equipment

: Safety goggles

Skin and body protective equipment

: Protective clothing, protective boots

#### 9. Physical and chemical properties

Appearance : Liquid

Color : Colorless

Odor : Acrid odor

Odor threshold : Perceivable odor of the concentration of 5-20ppm in the air.

pH : Strong alkalinity

Boiling point : 37.7°C

Melting point : -57.5°C

Flash point : Not available

Auto-ignition point : 651°C

Explosion characteristics

Explosion limit : upper : 27vol% lower : 16vol%

Vapor pressure : 761hPa(23°C)

Vapor density : 0.59

Density : 0.90g/cm<sup>3</sup> (20°C)

Solubility

Solubility in solvents : Water ; Miscible

Organic solvents ; Soluble in ethanol

#### 10. Stability and reactivity

Stability : Stable under normal conditions.

Reactivity : Reacts with acids or oxidizing substances.

Incompatible conditions : Light, heat  
Incompatible materials : Acids, Oxidizing substances  
Hazardous decomposition products  
: Nitrogen oxides

#### 11. Toxicological information

Acute toxicity : Harmful if swallowed(category 4)  
Dermal : Not possible to classify because of insufficient data.  
Inhalation(vapor) : Not possible to classify because of insufficient data.  
Inhalation(dust, mist) : Not possible to classify because of insufficient data.  
rat oral LD50=350mg/kg

Skin corrosion/irritation : Causes severe skin burns and eye damage(category 1C)  
In the skin irritation test with rabbits, there is a report that showed the corrosion by the application of a 20% aqueous solution of this substance. Since this substance is strongly alkaline, and based on the description that causes corrosion to eyes and skin, it was classified into category 1C.

Serious eye damage/eye irritation  
: Causes serious eye damage(category 1)  
There is the report that irritation was observed in the test of application of the present substance 1mg to the eye of a rabbit. There is the report that corneal clouding and turbidity no recovery, corneal disorder and angiogenesis were recognized in a test of applying the 28.5% aqueous solution in the eyes of rats. In addition, since this substance is the strong alkaline, there is the description that corrosion is observed on eyes and skin, and also there is the description that severe irritation is observed to the mucous membranes. Therefore it was classified into category 1.

Respiratory sensitization or Skin sensitization  
: Respiratory sensitization : Not possible to classify because of insufficient data.  
Skin sensitization : Not possible to classify because of insufficient data.

Mutagenicity : Not possible to classify because of insufficient data.

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system  
: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure  
: Cause damage to organs (central nervous system, respiratory organs) (category 1)

This substance has irritation to respiratory tract of humans, and causes severe irritation and pain of the respiratory tract mucosa. In addition, there is a severe corrosive to the mouth, throat, stomach by the oral route. There are known neurological effects in the by inhalation and skin exposure, generally, limited to visual impairment of direct exposure sites, causing an increase in blood ammonia concentration in the more severe exposure. As a result, seizures, coma, non-specific diffuse brain damage, muscle weakness, deep tendon reflexes decrease, the loss of consciousness are observed and lead to death. From the above results, it was classified into category 1 (central nervous system, respiratory organs).

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of insufficient data.

Aspiration hazard

: Not possible to classify because of insufficient data.

## 12. Ecological information

Ecotoxicity

Fish toxicity

: Toxic to aquatic life (category 2)

Chronic aquatic toxicity : Out of category

Mysidopsis bahia LC50=2.81-98.9mg/L/96H

Persistence and degradability

: High biodegradability

92(NH3)% by BOD

Mobility in soil

: Not available

## 13. Disposal consideration

Residual disposal

: Dilute the chemical with a large amount of water and neutralize with dilute acid, then flush in a drain. Or entrust approved waste disposal companies with the disposal.

Containers

: In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

## 14. Transport information

UN class

: Class 8 (Corrosive substances) P. G. III

UN number

: 2672

Marine regulation information

UN No.

: 2672

Proper shipping name

: AMMONIA SOLUTION

Class

: 8

Sub risk

: -

Packing group

: III

Marine pollutant

: P

Aviation regulation information

UN No.

: 2672

Proper shipping name

: Ammonia solution

Class

: 8

Sub risk

: -

Packing group

: III

## 15. Regulatory information



Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

## 16. Other information

### References

Solvents Handbook, T. Asahara et al, Kodansha Scientific Ltd. (1976)

Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)

Handbook of 16817 Chemical Products, The Chemical Daily Co. (2017)

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253, and it has the same required elements on the Material Safety Data Sheet (MSDS) which is prepared based on JIS Z7250:2010.